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ABSTRACT

In Taiwan's universities and colleges, the engineering department is a significant asset to higher education programs, and the department chair is expected to play multiple roles and take on many responsibilities. In order to know these roles and responsibilities better, 4 roles and 29 responsibilities were identified and constructed into a questionnaire that was mailed to all 377 engineering department chairs in Taiwan. A total of 256 chairs (67.9%) returned the questionnaire and reflected on their perceptions of the importance and loading for each responsibility. It was found that the agreement between respondents' perceptions of importance and loading was very high. Creating a shared vision by setting goals and developing plans, recruiting students, and determining faculty and staff roles were perceived as the top three important responsibilities. Creating a shared vision through setting goals and developing plans and developing and revising curricular programs were perceived as the top two heavy loading responsibilities. (Author/SLD)

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Engineering Department Chair's Roles and Responsibilities in Taiwan

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Engineering Department Chair's Roles and Responsibilities in Taiwan

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Abstract *—In Taiwan's universities and colleges, the engineering department is a significant asset to higher education programs and the department chair is expected to play multiple roles and take on many responsibilities. In order to better know the department chairs' roles and responsibilities, 4 roles and 29 responsibilities were identified and constructed into a questionnaire, which was mailed to all 377 engineering department chairs in Taiwan. Finally, 67.9% of the chairs* (i.e., 256 chairs) *returned the questionnaire and reflected on their perceptions of the importance and loading for each responsibility. It was found that the agreement between all respondents' perceptions of importance and loading was very high. Creating a shared vision setting goals and developing plans, recruiting students, as well as determining faculty and staff roles were perceived as the top three important responsibilities. Creating a shared vision setting goals and developing plans as well as developing and revising curricular programs were perceived as the top two heavy loading responsibilities.*

Index Terms *—competency model, engineering department chairperson, higher education, leadership and management*

A department chair/head should be not only a scholar and a teacher but also a manager and a leader. In order to become a successful department chair, a present or prospective chair needs to know what is expected of him/her and to continuously enhance his/her competencies. Some universities have devised training and development programs for department chairs [1]. For example, the Administrative Development Program (ADP) at the the University of Minnesota developed a competency model for the position of chair/head in an academic unit. In the model, the following four components were emphasized: (1) key functions of the department, (2) roles and responsibilities of the chair position, (3) competencies (knowledge, skills, abilities and attributes—KSAA) of the chair position, and (4) assessment of roles and responsibilities and KSAA for the chair position [2]. Roles and responsibilities represent the work agenda of the department chairs and are based on position expectations defined in university policy and held by multiple stakeholders, such as faculty, staff, students, collegiate administrators, and outside groups.

In Taiwan's universities and colleges, the department plays a substantial role in higher education programs, and the department chair is highly expected to play multiple roles and take on many responsibilities. In order to better know the engineering department chairs' roles and responsibilities, the ADP's 4 roles and 32 responsibilities were translated and modified to 4 roles and 29 responsibilities of an engineering department chair. Three present/former engineering department chairs assisted with wording the draft during its modification.

The modified engineering department chair's roles and responsibilities were constructed into a questionnaire and mailed to all 377 engineering department chairs in Taiwan in December 2002. After a follow-up, 67.9% of the chairs (i.e., 256 chairs) returned the questionnaire and reflected on their perceptions of the importance and work loading for each responsibility rated on a five-point Likert scale (1-lowest, 5 -highest).

All 256 respondents' characteristics are shown in Table 1. 41% of the respondents were working for public institutions while 59% were working for private institutions. In Taiwan, engineering departments exist in both academic universities/colleges and universities/colleges of technology. Table 1 indicates that 41.8% of the respondents worked for academic institutions while 58.2% worked for technological institutions. 59.4% of the respondents had 2-3 years of chair experience.

Tables 2 and 3 present the means and ranks of respondents' perceptions on the five-point Likert scale of each responsibility. The Spearman rank order correlation coefficients for the following bivariate sets of paired XY rankings were calculated as follows:

1. Total chairs' perceptions of the importance (X/M_i) and loading (Y/M_w) for each responsibility (see Table 2): rs (27) = .85, p < .01.
2. The public institution chairs' perceptions of importance (X/M_{ui}) and the private institution chairs' perceptions of importance (X/M_{ri}) for each responsibility (see Table 3): r_s (27) = .96, $p < .01$.
3. The public institution chairs' perceptions of loading ($X/_{uw}$) and the private institution chairs' perceptions of loading (X/M_{rw}) for each responsibility (see Table 3): r_s (27) = .91, $p < .01$.
4. The academic institution chairs' perceptions of importance (X/M_{ai}) and the technological institution chairs' Perceptions of importance (X/M_{ti}) for each responsibility (see Table 3): r_s (27) = .96, $p < .01$.

5. The academic institution chairs' perceptions of loading ($X/_{ac}$) and the technological institution chairs' perceptions of Loading (X/M_{te}) for each responsibility (see Table 3): $r_s(27) = .91, p < .01$.

Because the agreement between each of the above five pairs was very high, all respondents' perceptions of importance on each responsibility may represent the major opinions. Therefore, the following conclusions can be made:

1. The 4 roles and 29 responsibilities identified may serve as the ought-to-be/ideal references

   As shown in Table 2, each of the 29 responsibilities, comprising the 4 roles, was valued higher than 3, the median of the five-point scale. Hence, the 4 roles and 29 responsibilities identified may serve as the ought-to-be references of an engineering department chair's roles and responsibilities.

2. Some responsibilities should be highly emphasized

   As shown in Table 2, all 29 responsibilities may be ranked in a descending order as follows:

   (1) creating a shared vision, setting goals, developing plans
   (2) recruiting students
   (2) determining faculty and staff roles
   (4) recruiting faculty and staff
   (4) advocating the department's features
   (4) developing and revising curricular programs
   (7) fostering teaching activities
   (7) preparing and managing the budget
   (9) fostering scholarly activity
   (9) creating a more productive work environment
   (9) providing feedback to faculty
   (9) teaching classes
   (9) seeking research funding
   (9) conducting research and scholarly activities
   (15) managing space and facilities
   (15) participating in college/university governance committees/task forces
   (17) balancing the roles of a chair with personal, family, or community responsibilities
   (17) conducting personal growth activities
   (19) managing teaching resources
   (19) participating in development activities of professional associations/networks
   (21) encouraging service (e.g. committee)
   (22) supervising and appraising faculty and staff
   (23) coordinating fundraising and relationships with external constituencies
   (23) participating in outside committees and task forces
   (23) performing leadership tasks in professional associations/networks
   (26) disseminating information
   (26) participating in examination committees
   (28) developing faculty and staff
   (29) providing pro bono/paid consulting services

   Much attention should be paid to demonstrating the first group of responsibilities in the list. For example, creating a shared vision setting goals and developing plans, recruiting students, as well as determining faculty and staff roles were perceived as the top three important responsibilities. They should be highly emphasized.

3. A competency model should be further developed

   In order to effectively help recruit, select, train, empower or retain an effective engineering department chair, a competency model should be further completed, not only identifying roles and responsibilities of the chair, but also identifying key functions of the department. This model should also identify competencies of the chair and develop assessment of the chair's roles and responsibilities as well as competencies (i.e., KSAA).

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FIGURES AND TABLES

TABLE 1
CHARACTERISTICS OF THE 256 RESPONDANTS

	n	%
Institution		
Public	105	41
Private	151	59
Academic	107	41.8
Technological	149	58.2
Department Chair Experience (Years)		
1	39	15.2
2	80	31.3
3	72	28.1
4	28	10.9
5	9	3.5
Above 5	22	8.6
Unknown	6	2.3

TABLE 2
ALL RESPONDANTS'S PERCEPTIONS OF IMPORTANCE AND LOADING FOR EACH RESPONSIBILITY

Roles and Responsibilities	N	*Mi* (Rank)	*Mw* (Rank)
1.Administerting the Department			
1.1 recruiting faculty and staff	253	4.3 (5)	3.2 (20)
1.2 recruiting students	255	4.4 (2.5)	3.8 (4.5)
1.3 determining faculty and staff roles	254	4.4 (2.5)	3.8 (4.5)
1.4 fostering teaching activities	253	4.2 (7.5)	3.6 (12.5)
1.5 fostering scholarly activity	254	4.1 (11.5)	3.7 (9)
1.6 encouraging service (e.g. committee)	253	3.7 (21)	3.0 (27)
1.7 developing faculty and staff	254	3.3 (28)	2.8 (29)
1.8 creating a more productive work environment	252	4.1 (11.5)	3.6 (12.5)
1.9 providing feedback to faculty	253	4.1 (11.5)	3.4 (17)
1.10 supervising and appraising faculty and staff	254	3.6 (22)	3.1 (23.5)
1.11 creating a shared vision, setting goals and developing plans	254	4.6 (1)	4.2 (1)
1.12 preparing and managing the budget	254	4.2 (7.5)	3.7 (9)
1.13 managing space and facilities	252	4.0 (15.5)	3.5 (14.5)
1.14 coordinating fundraising and relationships with external constituencies	253	3.5 (24)	3.1 (23.5)
1.15 disseminating information	253	3.4 (26.5)	3.1 (23.5)
1.16 advocating the department's features	255	4.3 (5)	3.7 (9)
2. Fostering Teaching and Research			
2.1 teaching classes	253	4.1 (11.5)	3.7 (9)
2.2 developing and revising curricular programs	251	4.3 (5)	3.9 (2)
2.3 managing teaching resources	251	3.8 (19.5)	3.4 (17)
2.4 participating in examination committees	251	3.4 (26.5)	3.1 (23.5)

Roles and Responsibilities	N	*Mi* (Rank)	*Mw* (Rank)
2.5 seeking research funding	252	4.1 (11.5)	3.8 (4.5)
2.6 conducting research and scholarly activities	247	4.1 (11.5)	3.7 (9)
3. Providing Services and Supports			
3.1 participating in college/university governance committees/task forces	250	4.0 (15.5)	3.8 (4.5)
3.2 participating in outside committees and task forces	251	3.5 (24)	3.1 (23.5)
3.3 performing leadership tasks in professional associations/networks	250	3.5 (24)	3.1 (23.5)
3.4 providing pro bono/paid consulting services	253	3.2 (29)	2.9 (28)
4. Enhancing professional/personal development			
4.1 balancing the roles of a chair with personal, family, or community responsibilities	253	3.9 (17.5)	3.5 (14.5)
4.2 participating in development activities of professional associations/networks	252	3.8 (19.5)	3.3 (19)
4.3 conducting personal growth activities	253	3.9 (17.5)	3.4 (17)

TABLE 3
FOUR SUBGROUP RESPONDANTS' PERCEPTIONS OF IMPORTANCE AND LOADING FOR EACH RESPONSIBILITY

No.	Public/Private						Academic/Technological					
	Public			Private			Academic			Technological		
	n	M_{iu} (Rank)	M_{wu} (Rank)	*n*	M_{ir} (Rank)	M_{wr} (Rank)	*n*	M_{ia} (Rank)	M_{wa} (Rank)	*n*	M_{it} (Rank)	M_{wt} (Rank)
1.1	104	4.4 (2.5)	3.4 (16.5)	149	4.2 (6.5)	3.1 (23.5)	106	4.4 (3.5)	3.3 (16.5)	147	4.2 (6.5)	3.2 (21)
1.2	104	4.4 (2.5)	3.8(3)	151	4.4 (3)	3.9(4.5)	107	4.5(2)	3.8(3.5)	148	4.4(2.5)	3.9(3.5)
1.3	103	4.2 (7.5)	3.6(11)	151	4.5(2)	3.9(4.5)	106	4.2(6.5)	3.6(9.5)	148	4.4(2.5)	4.0(2)
1.4	104	4.2(7.5)	3.6(11)	149	4.2(6.5)	3.6(12)	106	4.1(10)	3.4(14)	147	4.2(6.5)	3.7(9.5)
1.5	104	4.1(12.5)	3.7(6.5)	150	4.1(10.5)	3.6(12)	107	4.1(10)	3.6(9.5)	147	4.1(11.5)	3.7(9.5)
1.6	104	3.7 (21)	3.0(26)	149	3.7(21)	3.0(27)	107	3.7(21)	2.9(27.5)	146	3.7(21.5)	3.1(25)
1.7	104	3.3(28)	2.8(29)	150	3.4(27)	2.8(29)	107	3.3(28)	2.7(29)	147	3.3(28.5)	2.8(29)
1.8	102	4.1(12.5)	3.6(11)	150	4.1(10.5)	3.6(12)	106	4.1(10)	3.6(9.5)	146	4.1(12)	3.6(13.5)
1.9	103	4.1(12.5)	3.5(14.5)	150	4.0(15.5)	3.4(17.5)	106	4.0(13.5)	3.2(19.5)	147	4.1(12)	3.6(13.5)
1.10	104	3.7(21)	3.1(24)	150	3.6(22)	3.1(23.5)	107	3.6(23.5)	3.0(25.5)	147	3.7(21.5)	3.2(21)
1.11	103	4.6(1)	4.2(1)	151	4.6(1)	4.2(1)	107	4.7(1)	4.2(1)	147	4.6(1)	4.2(1)
1.12	103	4.2(7.5)	3.6(11)	151	4.1(10.5)	3.7(8.5)	107	4.1(10)	3.6(9.5)	147	4.2(6.5)	3.7(9.5)
1.13	102	4.0(15.5)	3.5(14.5)	150	4.0(15.5)	3.6(12)	106	3.9(16.5)	3.4(14)	146	4.0(16)	3.6(13.5)
1.14	103	3.6(23.5)	3.2(21.5)	150	3.4(27)	3.1(23.5)	106	3.6(23.5)	3.2(19.5)	147	3.4(27)	3.1(25)
1.15	103	3.4(27)	3.0(26)	150	3.5(24)	3.1(23.5)	106	3.4(26.5)	3.0(25.5)	147	3.5(24.5)	3.1(25)
1.16	104	4.2(7.5)	3.6(11)	151	4.3(4.5)	3.8(6)	107	4.4(3.5)	3.7(6)	148	4.2(6.5)	3.7(9.5)
2.1	104	4.2(7.5)	3.7(6.5)	149	4.1(10.5)	3.6(12)	106	4.2(6.5)	3.8(3.5)	147	4.1(12)	3.6(13.5)
2.2	103	4.3(4)	3.7(6.5)	148	4.3(4.5)	4.0(2)	104	4.3(5)	3.8(3.5)	147	4.3(4)	3.9(3.5)
2.3	103	3.8(18)	3.3(18.5)	148	3.8(19.5)	3.4(17.5)	105	3.8(19.5)	3.2(19.5)	146	3.9(17.5)	3.5(17)
2.4	102	3.5(25.5)	3.2(21.5)	149	3.4(27)	3.1(23.5)	104	3.4(26.5)	3.1(23)	147	3.5(24.5)	3.2(21)
2.5	103	4.2(7.5)	3.8(3)	149	4.1(10.5)	3.8(6)	105	4.1(10)	3.8(3.5)	147	4.1(11.5)	3.8(6)
2.6	101	4.1(12.5)	3.7(6.5)	146	4.1(10.5)	3.8(6)	103	4.0(13.5)	3.6(9.5)	144	4.1(12)	3.8(6)
3.1	101	4.0(15.5)	3.8(3)	149	4.0(15.5)	3.7(8.5)	103	3.9(16.5)	3.6(9.5)	147	4.1(12)	3.8(6)
3.2	102	3.6(23.5)	3.2(21.5)	149	3.5(24)	3.1(23.5)	104	3.6(23.5)	3.1(23)	147	3.5(24.5)	3.1(25)
3.3	102	3.5(25.5)	3.0(26)	148	3.5(24)	3.2(20)	105	3.6(23.5)	3.1(23)	145	3.5(24.5)	3.1(25)
3.4	104	3.2(29)	2.9(28)	149	3.3(29)	2.9(28)	106	3.2(29)	2.9(27.5)	147	3.3(28.5)	2.9(28)
4.1	104	3.8(18)	3.4(16.5)	149	3.9(18)	3.5(15.5)	106	3.9(16.5)	3.4(14)	147	3.8(19.5)	3.5(17)
4.2	103	3.8(18)	3.3(18.5)	149	3.8(19.5)	3.3(19)	105	3.9(16.5)	3.2(19.5)	147	3.8(19.5)	3.4(19)
4.3	104	3.7(21)	3.2(21.5)	149	4.0(15.5)	3.5(15.5)	106	3.8(19.5)	3.3(16.5)	147	3.9(17.5)	3.5(17)

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